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aS622.S6

May

1983

Volume 4, Number 2

# **Soil and Water Conservation news**

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United States Department of Agriculture  
Soil Conservation Service





*Soil and Water Conservation News* is the official publication of the Soil Conservation Service. The Department of Agriculture has determined that publication of this periodical is necessary in the execution of public business required by law of this Department. Use of funds for printing *Soil and Water Conservation News* has been approved by the Director of the Office of Management and Budget through January 31, 1987. *Soil and Water Conservation News* (ISSN 0149-9060) is published 12 times a year. Postage paid at Washington, D.C.

**Magazine inquiries**  
Send inquiries to: The Editor, *Soil and Water Conservation News*, Public Information Staff, Soil Conservation Service, U.S. Department of Agriculture, P.O. Box 2890, Washington, D.C. 20013

**Subscriptions**  
Send subscription orders to Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402

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## Resource Conservation Is a Team Effort

### Comments:

From the  
SCS Chief

The Cooperative Extension Service—a long-time ally in soil and water conservation—recently reaffirmed as one of its highest goals to help “individuals and groups decide on wise use and management of the Nation’s natural resources.”

That news, contained in a recent report to Secretary Block on the future of the mainly local-State network known as Cooperative Extension, is good for the future of our efforts to increase conservation achievement.

Conservation farming techniques are changing rapidly. Some of them are now so complex that field days, research reporting, mass communications, and one-on-one selling of soil and water conservation are too large a job for any one agency to tackle.

Extension has been an excellent conservation partner because of its close ties with State agricultural experiment stations; a dedicated corps of soil and water management specialists; agents in every county who have the trust and confidence of many farmers and ranchers; well-established lines of communication through radio, television, newspapers, and other media; and experience in organizing successful meetings, demonstrations, and other educational events.

Working cooperatively with Extension is in the best interest of USDA agencies and the farmers and ranchers whom they all serve.

We in the Soil Conservation Service look forward to increasing and strengthening our activities with Extension to reach more land users and other citizens; to motivate them toward natural resource improvements; and to help them make conservation cost-effective.



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**Cover:** In Carroll County, Md., conservation tillage permits many farmers to double crop. This farmer plants soybeans in the stubble of the barley crop just being harvested. See article on pages 8 and 9 (Photo: Jim McCabe, visual information specialist, Public Information, SCS, Washington, D.C.)

John R. Block  
Secretary of Agriculture

Peter C. Myers, Chief  
Soil Conservation Service

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Editor, Judith E. Ladd

Associate Editor, Nancy M. Garlitz

Assistant Editor, Donald L. Comis

Editorial Assistant, Ann P. Serota

Design Consultant, Christopher Lozos

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# Teamwork Is the Key to Resource Conservation

## Agency Cooperation Pays Soil Conservation Dividends

by William Brune  
and Robert L. Crom

Whether it's in sports, business, government, or any other endeavor, the long-term results are the same: Teamwork is the best approach for attaining goals. That philosophy is being demonstrated daily somewhere in Iowa in the field of soil conservation.

Let's say a farmer has a badly eroding pasture. Should he or she call the Extension Service for a recommendation of better plants? Or the Soil Conservation Service for planning advice? Perhaps he or she should call the Iowa Department of Soil Conservation, or the local soil conservation district for cost-share assistance. But similar help is available from the Agricultural Stabilization and Conservation Service (ASCS). Or there's a possibility of working with the Iowa Conservation Commission to improve wildlife habitat as well as soil conservation.

The truth is, each of these agencies has some involvement in soil conservation programs, and each helps make the total conservation program stronger by working together in a cooperative approach.

The long-standing working relationship between the Cooperative Extension Service at Iowa State University and SCS provides numerous examples. The two agencies work with State and county governmental units in a cooperative soil survey program. Before 1967, SCS and the Iowa Agricultural Experiment Station were working cooperatively to survey about two counties a year. In 1967, the State of Iowa began contributing funds, and county

governments increased their fundings. The extra funds doubled output, to four counties a year, and fieldwork for the accelerated soil survey is expected to be completed in Iowa in 1988. With a number of agencies cooperating, the soil survey is better publicized and better used, too.

It's not unusual to find representatives of the Extension Service, SCS, ASCS, the Iowa Department of Soil Conservation, and the Iowa Association of Soil Conservation Districts at the same meeting on a regular basis, on the State and local level. Because their programs often ask for involvement from one another, working together is more of a necessity than a luxury.

When the Iowa Department of Soil Conservation began a soil conservation cost-sharing program in the early seventies, this same group met to discuss coordination of the program. The program was geared to work well with the existing ASCS cost-share program, and to mesh with technical assistance programs of SCS. The Extension Service was involved in publicizing the program, and soil conservation districts administer the cost-share funds.

In a number of instances, the Extension Service has been involved in sociological studies on soil conservation acceptance. That agency and others use the information to carry out soil conservation programs.

Most recently, a 1982 study by Iowa State sociologists surveyed farmers on their attitudes toward conservation tillage, analyzing barriers to more rapid adoption of the practice. Farmers' concerns included weeds, yields, and attractiveness of fields. The sociologists determined that tradition also keeps some farmers from reducing tillage.

Soil conservation research, especially on conservation tillage, is also a team effort—involving scientists of the State agricultural experiment station and USDA's Agricultural Research Service (ARS). Research activities are often conducted to meet needs identified by SCS and soil conservation districts.

Research findings, as well as appropriate management tips, are given firsthand to farmers at conferences, meetings, seminars, clinics, field days, and demonstrations. In addition to local efforts, more than a half-dozen multi-county conservation tillage events are held each year with SCS, Extension Service, ASCS, and soil conservation districts taking the lead. For example, specialists from Iowa State University and ARS joined farmers and conservationists to give current information to more than 3,000 farmers at last year's Eastern Iowa Conservation Tillage Show in Cedar Rapids.

A similar cooperative approach is taken each year to deliver 15 to 20 news articles to more than 700 newspapers and radio stations. The Extension Service takes leadership in assembling the special packet of soil conservation articles as part of a cooperative effort to celebrate Soil Conservation Week in Iowa.

The Extension Service also annually holds a short course for soil conservation district commissioners, to update them on research findings. The agency has conducted training sessions for commissioners on other subjects as well.

Interaction among conservation-oriented agencies in Iowa is commonplace, and the agencies take the concept of working as a team seriously.

**William Brune,**  
State conservationist, SCS, Des Moines, Iowa

**Robert L. Crom,**  
dean, University Extension, and director,  
Cooperative Extension Service, Iowa State  
University, Ames, Iowa

# No-Till Field Day Draws a Crowd

by E. B. Dyer  
and Tom McCutchen

Farmers from all over Tennessee flocked to the No-Till Crop Production Field Day last July in Milan, Tenn. They also came from 26 other States as well as Puerto Rico. In all, more than 4,000 farmers, agribusiness people, and agricultural workers attended what turned out to be the largest such field day ever held in the State.

Long before that day in July, Milan Agricultural Experiment Station personnel met with their counterparts in the Agricultural Extension Service and Soil Conservation Service to begin the planning. They planned the publicity, served on committees, built and staffed the educational booths, and acted as tour guides. They included other groups, such as the Tennessee Valley Authority, the Tennessee Farmers Cooperative, and soil conservation districts, to assure success. One soil conservation district, from Williamson County in central Tennessee, even sponsored a bus to bring to the field day more than 70 farmers who were interested in applying no-till systems to their farms.

The attendees, who included the Governor of Tennessee and two Members of Congress, were treated to research tours, field demonstrations, and numerous exhibits. The research tours featured weed control, no-till soybeans, no-till corn, and cotton production.

At one of the research plots, wheat had been swathed at 40 percent moisture on May 31st, with soybeans planted and herbicides applied immediately behind the swather. The wheat was picked up and combined a week later. At this plot farmers could see how swathing allows a longer growing season for soybeans than does normal doublecropping.

At another plot, no-till corn was planted beside a plot of corn planted in a prepared seedbed. In these plots, two sources of nitrogen had been applied at three different rates.

A highlight of the tour was a 30-acre wheat stubble field. Soon after wheat harvest in the spring, 14 no-till planters

and drills had planted soybeans in strips in the field so that those attending the field day in July could compare the planting results. At the field day, 7 other planters and drills joined the original 14 to give farmers a working demonstration of 21 pieces of equipment. One of the participants commented that it was "the largest number of different brands of no-till planters and drills that could be seen demonstrated side by side anywhere in the country."

Those interested in weed control took the tour to view the latest research on pre-emergence and overtop post-emergence weed control in soybeans and corn. The no-till soybean production tour gave them a view of work in stubble management, varieties, row spacing, doublecrop planting systems, and cyst nematode and foliar disease research. Demonstrations of a special sprinkler system applying water to no-till and conventionally planted soybeans were also given.

Many chose the no-till corn and grain sorghum tour which also featured a stop for an explanation of economic considerations of no-till crop production. The no-till cotton tour highlighted research plantings made in the previous year's cotton stalks and a rye cover crop compared to the conventional method.

The University of Tennessee's Entomology and Plant Pathology mobile lab was a busy place. Farmers brought in soil samples for cyst nematode testing

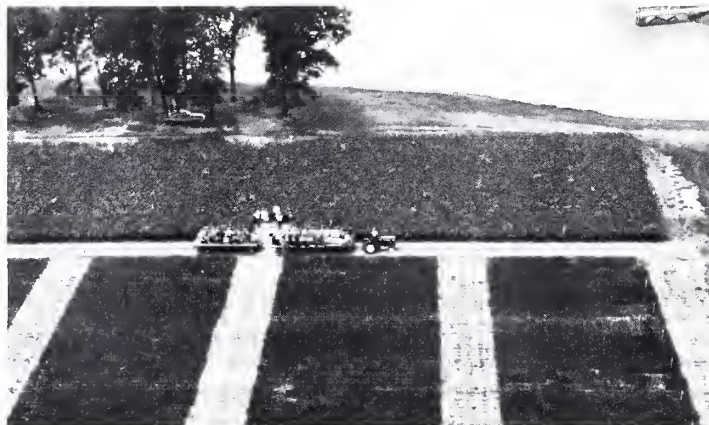
and plant specimens for disease diagnosis. Some also brought new problem weeds for identification.

Many of the visitors toured the two large circus tents, which were filled with 85 educational and commercial exhibits including those of USDA agencies and local soil conservation districts. The outdoor display area featured a special demonstration by Floyd Burrow, a retired businessman and former mayor of Milan. To help celebrate the 100th anniversary of Tennessee's Agricultural Experiment Station, Burrow brought his mule and horse to the field day to demonstrate cultivation methods carried out in Tennessee 100 years ago.

The Milan Experiment Station is gearing up for a repeat performance in 1983. Experiment Station, Extension Service, and SCS personnel, along with other groups, are putting the finishing touches to the third No-Till Crop Production Field Day to be held on July 20 and 21. In conjunction with the field day, the Experiment Station will host the Sixth Annual Southeastern No-Till Systems Conference on July 21. All the participants expect this year's attendance to top 1982's.

**E. B. Dyer,**  
assistant State conservationist, SCS,  
Nashville, Tenn.

**Tom McCutchen,**  
superintendent, Milan Experiment Station,  
University of Tennessee, Milan, Tenn.



More than 4,000 farmers, agribusiness people, and agricultural workers attended the No-Till Crop Production Field Day in Milan, Tenn., last July. They made it the State's largest field day ever. Research attractions at the field day put on by many cooperating agencies included plots showing no-till weed control, no-till soybeans, and no-till corn.



# Working Together to Stamp Out Erosion

by Morris S. Gillespie

Less soil erosion is taking place in Alabama because the Alabama Cooperative Extension Service and the USDA Soil Conservation Service are working together to help farmers stamp out erosion on cropland. An example is their cooperative work on no-till farming. Alabama farmers planted 365,000 acres of crops by the no-till method of conservation tillage in 1982 compared to 141,000 acres in 1980 and only 101,800 acres in 1977.

Conservation tillage is reducing soil loss to sheet and rill erosion on cropland in the State from an average of 10 tons per acre per year to the tolerance level of less than 5 tons per acre.

"Resource conservation cannot be accomplished without cooperation of all agencies involved in the area," says Ernest V. Todd, State Conservationist in Alabama. Todd says the cooperation has to begin at the top level and that is what is happening in Alabama. "Soil and water conservation district supervisors and other farmers see this cooperation and are very pleased," says Todd.

In early 1982, 13 conservation tillage meetings were held. Over 1,500 farmers and agricultural workers attended, representing 85 percent of Alabama counties. Discussions included weed control, soil and water conservation, legume varieties, research progress, and conservation tillage outlook.

During the 1982 planting season, 22 demonstrations were held across Alabama to show farmers no-till planting and spraying equipment. During the growing season, more than 15 followup tours were held for farmers to see how the no-till crops were faring. Farmers shared the techniques they used for planting and weed control.

Those taking part in the meetings, demonstrations, and tours included agronomists with the Extension Service, Alabama Agricultural Experiment Station, and SCS. Weed specialists with the Extension Service and weed scientists with experiment stations discussed weed control. Others included county agents, SCS district conservationists, farmers, conservation districts,

and seed and chemical companies.

Workshops were conducted for SCS and Extension Service field personnel by Extension Service weed specialists in 1981 and 1982.

"We're pleased to join with the other agencies who are concerned about farm productivity and soil conservation and to work cooperatively on these problems," said J. Michael Sprott, dean of Extension and director of the Alabama Cooperative Extension Service.

Sprott, Todd, Gale Buchanan, director of the Alabama Agricultural Experiment Station, and Marion Sanders, a farmer and official of the Alabama and National Association of Conservation Districts, discussed no-till opportunities and their support for the concept at the Alabama Association of Conservation Districts annual meeting in November 1981. Over 300 farmers and conservation leaders attended.

The cooperative efforts of Harry Houston, Morgan County extension agent; Roger Chapman, SCS district conservationist (retired); and Joe Berry, current SCS district conservationist, in promoting and providing assistance in no-till have resulted in wide acceptance of the practice in Morgan County. They cooperated in farmer meetings, demonstrations, and information activities and worked together to help farmers solve problems with no-till.

An information and education conservation tillage campaign is being planned to further promote conservation tillage and help insure success for farmers using the method in 1983.

"We in SCS are excited about the opportunities we have to work with other agencies in promoting conservation tillage," says Todd. "It's the most cost effective erosion control practice we can offer farmers."

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**Morris S. Gillespie,**  
public affairs specialist, SCS, Auburn, Ala.

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## Good News for Fish Farmers in Alabama

A new fish farming center has opened in Greensboro, Ala., to help fish farmers fight parasites and diseases and improve water quality. The center is in west Alabama where more than 90 percent of the State's catfish production acreage is located.

After several groups failed to obtain funds for the center, Alabama's soil and water conservation districts appealed to the State Soil and Water Conservation Committee. The committee obtained a \$200,000 grant from the Alabama Legislature for establishing and operating the Fish Farming Center.

The center is a cooperative effort of the Soil Conservation Service, the Alabama Cooperative Extension Service, and the Agricultural Experiment Station of Auburn University. SCS has provided an agricultural engineer to assist fish farmers with the design of water systems and production facilities. The Extension Service has provided a management biologist and the Experiment Station has provided a disease specialist.

The facility has a fully equipped laboratory in which parasite and disease problems can be diagnosed and where many water quality problems can be solved. Fish farmers in the nine-county area surrounding the center will no longer have to take or send their diseased fish to Auburn, Ala., for diagnosis. At the new center, diagnosis can be made and treatment recommended in hours and, in some cases, minutes. The same is true for most water quality problems.

Long-range plans are to make facilities of the center available to fish farmers throughout the State. Center vehicles will be equipped with two-way radios to permit the staff to serve the fish farmers more efficiently.

It is hoped that private enterprise will assume the duties of the center as the catfish industry in Alabama matures.

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**H. D. Kelly,**  
biologist, SCS, Auburn, Ala.

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# Farmers Find Friends in Government

by Kurt Beckstrom

Whenever the word "government" slips into conversation among business-people, including farmers, some participants usually regard it as a dirty word. Phrases like "government meddling," "ridiculous policies," or "they'll kill this business" crop up.

But farmers who have had experience with certain government agencies know that they do have friends in government. A good example is in Antrim County, Mich. Farmers there know they can make a call to Bellaire, if they need to, and get all the help or advice they want from an enthusiastic group of people who work in government.

The people whom farmers talk to most are Warren Studley, Soil Conservation Service (SCS) district conservationist; Edgar Wright, SCS soil conservation technician; Burt Stanley, county Extension director; Ernie Carrick, Agricultural Stabilization and Conservation Service (ASCS) county executive director; and Jim Monroe, Farmers Home Administration (FmHA) county supervisor.

These men respect their professional relationships with one another and each is determined to provide the best service possible to the farmers in his domain.

All of them admit that their respective jobs are made easier by the spirit of cooperation that flows through the group. The fact that their offices are close together is another asset. The ASCS, SCS, and FmHA offices are in one building called a central service center and the Cooperative Extension Service (CES) office is only a 30-second walk across the street. They are also quick to recognize the time and effort put in by the people who work in their office.

"We realize that if we are going to help someone set up a good farming operation, we have to cooperate and combine our efforts," says Monroe.

Indeed, a lot of cooperation combined with mental work and good planning are required by the farmer and government employees to establish a successful farm in Antrim County; especially since the land is typified by loamy soils over

clay or stones on relatively steep side hills. Carrick sums it up when he says, "We can't afford to lose even 1 ton of soil to erosion up here." The soil is fertile; it just needs to be cared for.

In the last few years, the people in the agencies have had plenty of chances to work together with people wishing to start farming or expand their operations. "Agriculture has found Antrim County in the last 5 years," says Studley. "We are getting a lot of expansion in potato operations, cherry orchards, raspberries, trout farms, and Christmas tree operations."

Agricultural expansion and aid from a government agency go hand in hand, but when a person walks into one of the offices in Bellaire, it goes a bit further because he or she can count on getting eager assistance from the whole team if he or she needs it.

None of the department heads is shy about asking someone from another agency for his or her input. Stanley says it is because of the history of teamwork among the offices. "Working together is easy because of the atmosphere of co-operation established years back, even before any of us started working here," he says. "There is no competition."

Stanley commends Monroe because the FmHA supervisor stresses the importance of good farm management to prospective borrowers and then asks the CES and SCS employees for opinions on problems the farmer may face.

"If a farmer comes to FmHA about a loan, I'll go out and look at the farm; but I'll also suggest that he or she talk to Warren or Burt," says Monroe.

That is just what happened when dairy farmers Jim, Gary, and Glenn Rubingh, of Rubingh Breezy Acres near Ellsworth, wanted to build a new dairy barn and install a gravity flow manure system.

Jim, 64, father of Gary, 33, and Glenn, 25, has farmed in Antrim County for many years. When his sons showed a desire to join the operation (Gary worked at a job off the farm for a time), they decided it was time to expand. A double-six milking parlor and an 85-stall freestall barn were built.

The Rubinghs wanted a labor-saving waste handling system and decided a gravity flow system might be the answer. They went to SCS and talked to Wright. Wright contacted the CES office to ask for Stanley's advice. Stanley had read about a successful gravity-flow system that had been installed in an eastern



Jim Rubingh (right, foreground), a Michigan dairy farmer, his two sons, and representatives from the four USDA agencies who assisted with the installation of a gravity flow manure system on the Rubinghs' farm examine the waste storage pond.



State. He found out where it was and contacted a CES office in New York to ask for the plans.

When they arrived, he, with the help of Wright and Studley, set out to plan and design a system that would satisfy the Rubinghs' needs.

When the project was complete, the Rubinghs had a manure system they say was just what they were looking for. The system seems very simple. The manure is scraped into a trench at one end of the barn. An underground pipe, 70 feet long and 24 inches in diameter, carries the manure from the trench into a waste storage pond. The difference in elevation from the trench to the bottom of the waste storage pond is 18 feet. A concrete slab beyond the collection trench can be used for storage in case of an emergency, such as a freezeup.

Inside the barn, the alleys between the feedbunk and the freestalls are cleaned by an automatic scraper. The scraper system can be set with a clock to run at any time interval desired. Once every hour it dumps manure into the inclined trench at the end of the barn. The manure flows out of the trench, through the pipe, and into the waste storage pond, all through the power of gravity.

According to Jim, the total cost of the system (pond and pipe, not including the scraper) was about \$7,000. From the start the ASCS worked with the other agencies. "Our highest priority for cost-share here is on animal waste and erosion control," says Carrick. In this case, government policy had to have pleased the farmers, because Jim says the ASCS picked up about 50 percent of the \$7,000 tab.

All of the Rubinghs are pleased because barn cleaning is no longer a chore. Their labor is restricted to the once or twice a year they empty the waste storage pond. They are also impressed with the price. "What we have put up is the most efficient and inexpensive operation we could build," says Jim.

Jim is no stranger to the assistance provided by government agencies. The erosion control management he and his sons now practice sprouted roots 25 years ago when Jim was on the county ASCS board. He also serves as a district director with the Antrim Soil Conservation District. The Rubinghs use contour planting, stripcropping, cover cropping, grassed waterways, and conservation crop rotation to stop erosion on their

farm. "The SCS assisted in laying out the contour strips," he says. "And the ASCS provided some cost-share money." Jim adds that it was a long time ago and he cannot recall the cost-share amount.

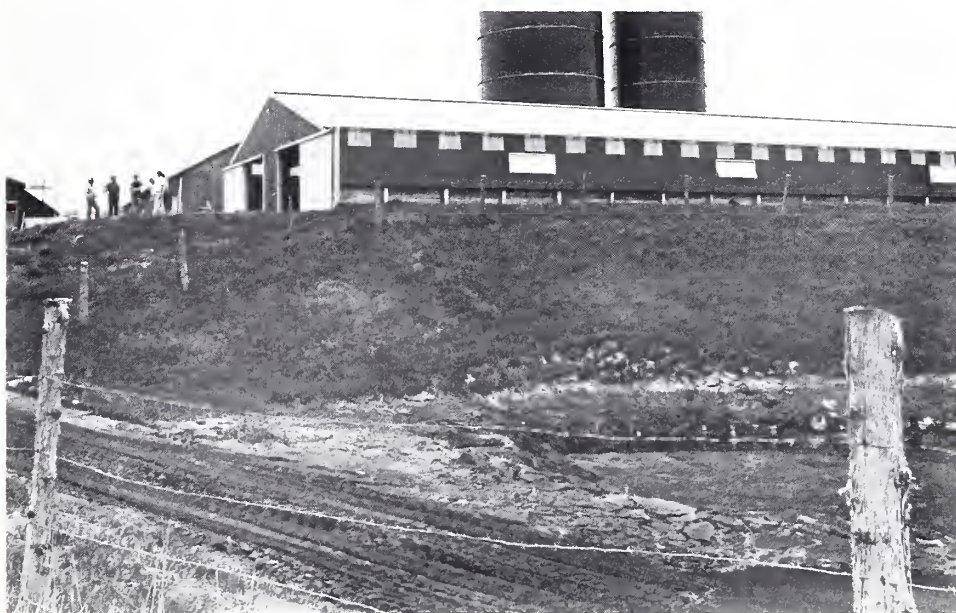
The Rubinghs milk 62 Holstein cows and own 600 acres of land. They raise corn, hay, certified wheat, and some oats. Jim, now semi-retired, stays active in the operation, but occasionally enjoys some time off. "If I want to take a day or weekend off, I can do it," he says.

Glenn and Gary have taken over much of the farm's responsibilities and they both look forward to a productive future on the farm. Thanks to their father and some government agency people of the past who protected the land from erosion, their future looks good.

And with the support of the people currently holding those government positions, they know a helping hand is not far away.

**Kurt Beckstrom,**  
assistant editor, *Michigan Farmer*, Lansing, Mich.

Adapted from an article in the August 7, 1982, issue of *Michigan Farmer*.



By gravity, an underground pipe 70 feet long and 24 inches in diameter carries manure from an inclined trench at one end of the Rubinghs' barn to the waste storage pond below.



## Conservation Tillage—

## An Attractive Solution to Soil Erosion



The "trash" littered field of a conservation tillage system in Nebraska may seem unsightly to some, but the crop residue protects the land from erosion and retains moisture for the next crop.

**C**onservation tillage may not be pretty—but it's one of the most attractive solutions to the problem of soil erosion on cropland.

Presently the erosion rates on one out of three cropland acres are high enough to threaten long-term productivity. To help reduce this serious soil loss, the U.S. Department of Agriculture, universities, and industry are constantly seeking new ways to help farmers develop and apply affordable conservation practices. Of these, conservation tillage has developed into the fastest growing farming system in history.

Through conservation tillage, farmers can greatly reduce the number of times they need to work the land. They can reduce or even eliminate the practices of plowing, disking, harrowing, and cultivating to control weeds. In conservation tillage systems, both weeds and insects



After a brief storm, the fine soils on this western Tennessee farm easily wash off the unprotected cornfield, dumping sediment and chemicals into nearby streams and roadways. Nationally some 2.8 billion tons of soil erode each year, creating a serious long-term resource problem.



can be controlled by herbicides and insecticides.

As a result, the new crop is planted directly into the residue of the previous crop. That residue, unsightly as it may be, protects the soil from wind and water erosion and acts as a mulch to retain moisture.

There are various conservation tillage systems—till-plant, ridge planting, and no-till, to name a few. They all share a common aim: to save soil, fuel, and labor. Of all the conservation tillage systems, no-till disturbs the land the least, leaving the most residue on the surface.

In 1972, fewer than 30 million acres of U.S. cropland were under conservation tillage. During 1982, that figure topped 100 million acres, or about one-fourth of all cropland.

On most soils in the United States, conservation tillage is by far the most

cost-effective approach of reducing soil erosion. On one Missouri soil, for example, conventional tillage, which leaves the field clean and bare, results in average annual erosion of more than 40 tons of soil per acre. By switching to no-till, the most effective conservation tillage system for this land, the farmer could reduce erosion loss to only 12 tons per acre at a cost of 67 cents per acre less than conventional tillage.

USDA's Soil Conservation Service estimates that in 1983 some 13 million acres will be planted to no-till, up from 3.3 million in 1972. By the year 2010, USDA estimates more than half of all cropland planted will be under no-till, and 95 percent in some form of conservation tillage.

Until recently, a major deterrent to conservation tillage has been its appearance. A "trashy-looking" field

was, to many, a sign of a poor farmer. But today, the residue-littered field is fast becoming the mark of an intelligent farm manager. In fact, many now say conservation tillage may well be the most significant agricultural change since the introduction of hybrid corn.

For more information and technical help on conservation tillage, contact the local soil conservation district office or State extension service. Cost-sharing assistance is available in many States through county agricultural stabilization and conservation committees.

Photos by Tim McCabe, visual information specialist, Public Information, SCS, Washington, D.C., and Gene Alexander, audiovisual production specialist, SCS, Fort Worth, Tex.



On this Iowa farm, no-till soybeans grow through the residue left by the fall corn harvest. No-till planting leaves nearly all the residue of the previous crop intact to act as a barrier to slow runoff.



The best approach to reducing cropland erosion combines conservation tillage systems with other needed practices. In Iowa, for example, this farmer plants no-till corn on the contour on land that has been terraced.

# News Briefs

## SCS Offers Economic Evaluation of Cropping Options

Most farmers recognize that reduced-tillage systems will help cut soil losses. Data developed in the recent Soil and Water Resources Conservation Act study showed that the residue left on the surface in no-till systems can cut water erosion losses by up to 95 percent.

But the question becomes "How many dollars will it cost or save if I make changes which will trim soil losses?" Norm Rollag, agricultural economist for the Soil Conservation Service in Indiana, has implemented a new program which can help make those comparisons.

The program, which is called Alternative Resource Management Systems Evaluations (ARMSE), allows one to evaluate the economic consequences of different cropping alternatives on paper before any changes are actually made. "Our goal is to show the impact of several different alternatives," Rollag says. "Then the farmer can decide which system best fits his operation."

Here's how the process works: First, the local soil conservationist helps

determine the potential for soil loss on a given field. He or she then suggests several resource management systems which would bring erosion under control. These alternatives may mean only a change in tillage methods, or they may involve switching tillage methods plus adding other conservation practices.

The next step is to determine the annual net returns from each option. Budgets prepared by SCS can serve as a guideline. These can be adjusted to fit individual situations by changing costs and inserting your own yield and price figures.

Rollag emphasizes that this information should be used only to evaluate the consequences of the different alternatives. It is not designed as an analysis of crop enterprises.

### ARMSE Example

Assume that the annual soil loss on a 40-acre field is 15 tons per acre. The field has a 6 to 12 percent slope and is well drained. Currently, the farmer plants 27 acres in corn and 13 acres in beans and uses conventional tillage methods. The annual returns to land, labor, and management for the field equal \$2,480 (see table).

By raising alfalfa-orchardgrass-hay continuously, soil losses could be cut to about 1 ton per acre (alternative A in table). At a yield of 6 tons per acre and a selling price of \$70 per ton, the annual net return for the 40-acre unit would be \$6,330.

Soil loss could also be brought down to more acceptable levels by using alternatives B and C. B consists of no-till corn and beans in a rotation. C involves a rotation of no-till corn followed by wheat and doublecrop beans.

Studying the analysis allows one to make economic comparisons between the alternatives. When comparing options, be sure to include the economic impact of soil losses. Remember, too, that realistic income and cost figures must be used to make the analysis acceptable to the landowner.

For more information, contact Norm Rollag, Soil Conservation Service, 5610 Crawfordville Road, Corporate Square-West, Suite 2200, Indianapolis, Ind. 46224.

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## Crop options example (data for a 40-acre field)

Option	Annual gross return	Annual costs	Annual conservation practice costs	Annual net returns	Annual soil loss (estimated)
Current system	\$ 9,240	\$ 6,760	—	\$2,480	15 tons
Alternative A	16,800	10,470	—	6,330	1 ton
Alternative B	9,145	5,995	715	2,435	4 tons
Alternative C	11,490	7,215	715	3,560	5 tons



## Conservation Foundation Releases Film on Soil Erosion

"On American Soil," a film recently released by the Conservation Foundation, discusses the nature and extent of the soil erosion problem in America today. Through interviews with farmers and soil conservation experts—including Soil Conservation Service District Conservationist Vic Simpson from Memphis, Tenn.—and with the use of old photographs and film clips, the movie explains the economic bind in which farmers find themselves. It discusses the problems caused by more intensive row cropping, the use of increasingly large farm machinery, and absentee landlords.

The film also discusses contradictory government policies, which have undermined the effectiveness of soil conservation programs during the past 50 years.

Intended for a lay audience, the film is nontechnical, appropriate for classroom use for courses on natural resources, agriculture, farming, and food policies. Additionally, it will interest farmers and other residents of rural communities, conservationists, legislators, and government officials who need to understand better the economic pressures on American agriculture.

The 28-minute film can be rented for \$40 per showing or purchased for \$450 per 16 mm print. It is also available in 3/4-inch videocassette at the same prices. Order from Film Library, The Conservation Foundation, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036.

## USDA Produces Filmstrips and Slide Sets About People on the Farm

The U.S. Department of Agriculture has produced six presentations on U.S. farm families called People on the Farm. The

presentations are available as filmstrips or slide sets and come with an illustrated narrative guide and a booklet. They cover five areas of agriculture and are designed for students and others unfamiliar with farming operations.

One presentation reveals the workings of a Maryland dairy farm. Another visits a family in Mississippi who raises broilers. Others cover orange growing in Florida and California; beef cattle raising in Missouri and Colorado; and corn and hog farming in Iowa. Another presentation shows how a family is getting started in farming in Michigan. The family members, who are black, are bucking a trend of declining black farm population.

Each presentation is available for \$21.50 in the filmstrip version and \$29.50 in the slide set version. They may be ordered from the Photography Center, Office of Governmental and Public Affairs, Room 4407-S, U.S. Department of Agriculture, Washington, D.C. 20250.

## Film Available on Wildlife and the Farm

Remington Arms Company, Inc., has produced a film about its 3,000-acre wildlife management area and working farm, titled Wildlife and the Farm.

The film takes the viewer through the seasons at Remington Farms in Kent County, Md., stressing the importance of good conservation of soil and water for wildlife and productivity. The message is that wildlife management and modern farming can work together. Some of the soil and water conservation practices portrayed in the film are doublecropping soybeans and wheat, grassed waterways, a farm pond, and no-till. Wildlife management practices include plantings for food and cover, maintaining an area of bottomland hardwoods, and nesting boxes for various kinds of birds.

The 28-minute film is available for free loan from Karol Media, 625 From Road, Paramus, N.J. 07652.

## Bumper Sticker Campaign Promotes Reduced Tillage

**SAVE THE STUBBLE  
BURY THE PLOW**



**I'm a  
Residue  
Farmer**



**TRY NO TILL**



Iowa's corn and bean fields showed last fall that most of the State's farmers were serious about reducing tillage. Last winter, many of those same farmers used their pickup trucks to help drive the point home.

More specifically, they used the bumpers of their pickups to display stickers promoting less tillage. It was part of a statewide effort by the Soil Conservation Service, the Iowa Association of Soil Conservation Districts, the Iowa Department of Soil Conservation, and the Iowa Farm Bureau Federation.

Each of the three stickers uses the same logo but contains a different slogan (see illustration above).

Lynn Betts,  
public affairs specialist, SCS, Des Moines, Iowa

Send present mailing label and new address including zip code to:

U.S. Department of Agriculture  
Soil Conservation Service  
P.O. Box 2890, Room 0213-S  
Washington, D.C. 20013

Official Business  
Penalty for private use, \$300



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## New Publications

### Soil Erosion: Crisis in America's Croplands?

by Sandra S. Batie

This nontechnical book is for the informed or lay reader who wants to know the basics about the soil erosion problem in America, its consequences, and the options for dealing with it. It reports what researchers have documented and what they suspect about erosion, and it concludes that cost-effective solutions are available to help curb soil losses. The author writes about the nature and extent of the soil erosion problem, as well as factors affecting farmers' adoption of conservation practices. The book also critiques current Federal and State conservation programs and policies and analyzes techniques and strategies for reducing soil losses. An appendix discusses measuring soil erosion losses.

*Soil Erosion* can provide legislators and government officials an informed perspective about what experts really know about erosion. The book will also be of interest to conservationists; teachers and students of agricultural courses; those who follow food, farm, and agricultural policies; and soil conservation district personnel and extension agents.

This book is available for \$8.50 (plus \$2 per order for shipping and handling) from The Conservation Foundation, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036. (Subscribers to the *CF Letter* are entitled to a 20 percent discount.)

### Farms in Transition

Edited by David Brewster,  
Wayne Rasmussen, and  
Garth Youngberg

The chapters in this book were first presented as papers at a symposium on farm structure and rural policy in October 1980, at Iowa State University. Each chapter was written by an expert in a particular field.

Attended by political scientists, sociologists, historians, soil scientists, economists, writers, and editors, the symposium was intended to extend the range of the structure dialogue by tapping the expertise of as varied a group as possible. Information presented in some of the papers includes agricultural trade and farm structure, economic policies and variables, citizen and consumer groups in policies affecting farm structure, and flexibility in conservation policy.

A copy of this book is available for \$9.75 from Iowa State University Press, 2121 South State Avenue, Ames, Iowa 50011.

### 'Atlantic' Coastal Panicgrass

by the Soil Conservation Service

This pamphlet announces the release of the new warm-season, perennial grass, which is useful for long-term stabilization of critical areas. 'Atlantic' is adapted to the coastal plain and the piedmont region from Massachusetts to Texas.

The pamphlet gives a brief, physical description of the grass and how best to establish a successful stand.

Copies of the pamphlet are available from local and State Soil Conservation Service offices.

### Idaho Soils Atlas

by Raymond J. Barker,  
Robert E. McDole,  
and Glen H. Logan

As a result of many years of field work and research on the part of the authors, this book presents the definitive classification and description of the various soils occurring in Idaho. The 108 color photos depict the various horizons in each soil type and the type of topography in which they occur.

Soil scientists, conservationists, students, planners using soil information, and the curious layperson will find this book an easy-to-use reference.

Copies are available for \$18.95, prepaid (Idaho residents add sales tax), from University Press of Idaho, Dept. S, P.O. Box 3368, University Station, Moscow, Idaho 83843.

### Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1973

Compiled by James B. Burford,  
Jane L. Thurman, and  
Ralph T. Roberts

Hydrologic data from 100 agricultural watersheds are summarized in this 404-page publication. Presented in the publication are basic data on monthly precipitation and runoff; annual maximum discharge and maximum volumes of runoff; daily precipitation and mean daily discharge, with daily air temperature for some areas; and selected runoff events, with associated data on rainfall, land use, and antecedent conditions for agricultural watersheds where research was in progress during 1973.

The classification and correlation of soils and evaluation of other watershed characteristics in the descriptions have been

based mostly on field surveys by the Soil Conservation Service. Throughout the watershed studies the State agricultural experiment stations have collaborated in selecting, planning, and conducting these studies. In several studies the U.S. Geological Survey and State and local agencies, such as State water boards and highway departments of local drainage and conservation districts, have assisted in the work.

This publication provides information for government agencies, university staff members, graduate students, private engineers, and those who need detailed, factual information concerning agricultural watersheds.

Although the data on which this publication is based were collected in 1973, or earlier, the findings are still valid and are used for further research on agricultural watersheds.

For information on the availability of this publication (Misc. Publ. No. 1420) contact USDA, Agricultural Research Service, Publications Distribution Officer, Room 330, Bldg. 005, BARC-West, Beltsville, Md. 20705.

### Recent Soil Surveys Published

by the Soil Conservation Service

**Federated States of Micronesia:** Island of Ponape.  
**Idaho:** Bonner County Area.  
**South Carolina:** Georgetown County.